

Observations on the Skink *Anomalopus reticulatus* (Gunther) (Lacertilia: Scincidae)

BY K. R. McDONALD*

Introduction

In 1873 Gunther described *Chelomeles reticulatus*, a species of skink with rudimentary limbs from the Clarence River in north-east New South Wales. Since then little has been written on the species except taxonomic reviews by Boulenger (1897), Mittleman (1952) and Cogger (1973, 1975), although some distributional and habitat notes have been presented recently by Czechura (1974) and Cogger (1975).

Anomalopus reticulatus (Gunther) is distinguished from other species of the genus by the characteristic 24-28 longitudinal midbody scale rows and the presence of tridactyl limbs which are reduced and weak. The species is vermiform in appearance with the tail slightly flattened dorso-ventrally.

The following are additional observations on the species gathered as part of field work for fauna conservation purposes.

Materials and Methods

The colours, sizes, distribution, diet and breeding of *A. reticulatus* were obtained from examination of 21 species in the Australian Museum, Sydney, and the Queensland Museum, Brisbane, together with data obtained during field surveys by the National Parks and Wildlife Service of Queensland.

The following body measurements were used: Snout to vent length (SVL) — from tip of snout to vent; tail length (TL) — from vent to tip of tail on specimens with original tail; mid-body scales — number of longitudinal scale rows at mid-body.

Vegetation types were based on Walker (1972).

Results

Colours

Although fading occurs after material has

been in alcohol for some time, and although few specimens were examined alive, specimens examined showed marked variation in colour.

Five colour forms were defined:—

Type A. Where the dorsal surface of the body exhibited distinctive irregular black and white markings (two specimens); the dorsal surface of the tail consisted of smaller patterns than the body; a broad black patch was present on the head with extensions of the patch covering the eyes; the snout was white from the front forwards; the scales of the ventral surface were white with individual scales heavily marked in dark brown along each lateral edge with a dark band running long the base of the scale; the throat was mainly white with irregular dark markings. These were juveniles (Figure 1).

Type B. Where specimens were not as distinctly marked; scales around the eyes were dark; the snout was paler from the frontal scale forwards; five individuals showed brown coloration dorsally with dark brown bands across the body at regular intervals (Figure 2); the bands were irregular or as blotches on the tail; the regenerated tail portion was not banded; the tail of one individual (female from Lamington Plateau, Q., November 1974) was orange-tinged on the ventral and lateral surfaces; the ventral part of the body of these banded specimens was white with dark edges to each scale and the lateral part of the head had a pale creamy coloration (yellowish when alive). These specimens were 7.0 cm and sub-adult and adult in ages.

*National Parks and Wildlife Service of Queensland, Animal Research Institute, Fairfield Road, Yeerongpilly, Q. 4105.

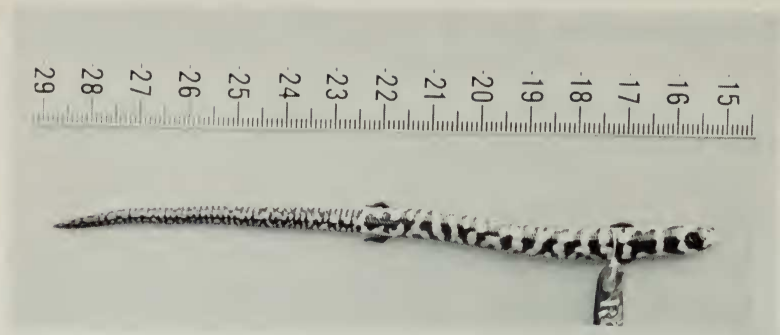


Fig. 1. — Type A coloration *A. reticulatus* (centimetre scale).

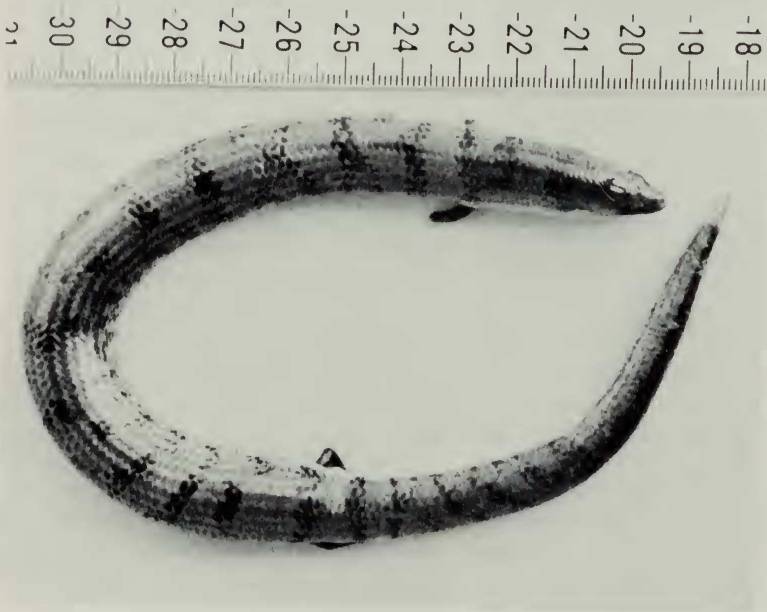


Fig. 2. — Type B coloration *A. reticulatus* (centimetre scale).

Type C. Where specimens (eight) were paler brown than in type B and had a single dark brown band on the nape; three additional specimens exhibited irregular blotches on the dorsal surface immediately behind the nape band; these specimens lacking general banding of the body had individual ventral scales with dark edges; the

throat in all specimens was whitish with occasional dark markings and the side of the head was creamy; scales around the eye were dark; faded specimens were whitish or pale brown dorsally and the single dark brown nape band was still discernible. These were adult specimens.

Type D. Where the specimens were un-

banded (two); these were pale to dark brown dorsally; the ventral surface was darker than other types although individual ventral scales still had the predominantly dark lateral markings. These were adult specimens.

Type E. One specimen (a male from Cooloola, Q., January 1973) was uniform bluish-grey on the dorsal surface and white on the ventral surface; several old scales adhered in parts; the ventral scales had the typical darker edges; other *A. reticulatus* observed in the field (also Cooloola, January 1973) had the similar coloration with bands absent. The specimen was an adult.

Juvenile specimens thus exhibit a distinctly marked pattern as in other reptiles, e.g. *Tiliqua gerrardi* (Gray), *Notechis scutatus* (Peters), *Pseudonaja textilis* (Dumeril, Bibron & Dumeril) and *Hydromedusa elegans* (Gray).

Sizes

The specimens ranged in snout vent length from 6.8 cm to 23.1 cm. (Table 1).

Worrell (1970) stated that the length of *A. reticulatus* is over six inches (= 15 cm) total length, whilst Boulenger (1887) and Loveridge (1935) give the SVL of specimens from New South Wales as being 20.5 cm (30.0 cm minus regenerated tail 9.5 cm) and 14.7 cm.

Of nine specimens with intact tail, eight had the tail longer than the snout vent length, while a juvenile male had the tail similar in length.

Distribution and Habitat

Specimens were examined from the following localities (see Figure 3).

Lamington National Park and Macpherson Range (11 specimens): The eight specimens with habitat data were collected in closed forest; most under leaf litter during the day.

Tamborine Plateau (one specimen): Vegetation on the plateau is closed forest and tall layered open eucalyptus forest (in national parks).

Cunningham's Gap (national park) (one specimen): Collected in tall open layered eucalyptus forest (a photograph of an addi-

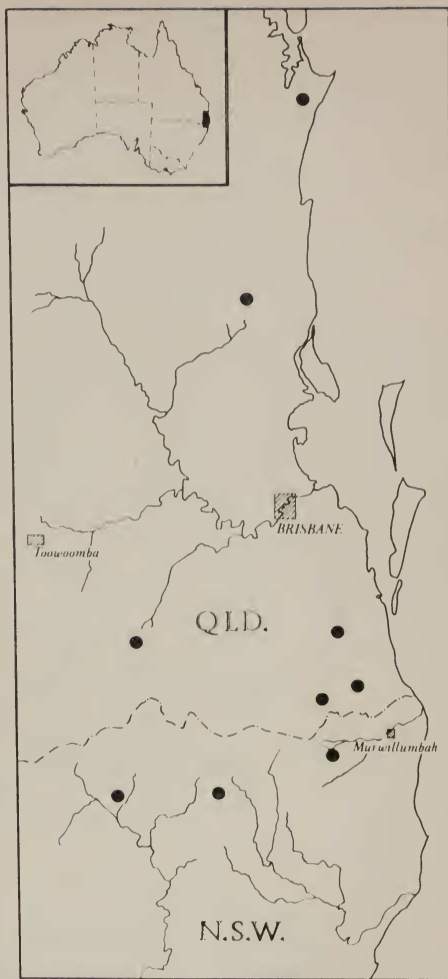


Fig. 3. — Map showing distribution of *A. reticulatus* in eastern Australia.

tional specimen taken by B. Baldwin, Forestry Department, Brisbane, in January 1972 was examined also).

Cooloola (state forest) (one specimen): Collected in a logged closed forest of *Tristania conferta* R. Brown, *Agathis robusta* (C. Moore ex F. Muell.), *Ficus* species, and other softwood closed forest species overlying silica sand (Coaldrake 1961); several other specimens were observed.

Blackall Range near Maleny (one specimen): Habitat was disturbed closed

TABLE 1 — Measurements, sex and reproductive data of *Anomalopus reticulatus* (SVL = Snout vent length, TL = Tail length, R = regenerated tail, * = large ovarian follicles present)

Location	Collection Date	Sex	Mid Body Scales	SVL (in cm)	TL (in cm)	Ratio SVL/TL	Reproductive No. Oviducal Eggs	Condition Left testes length (cm)
Lamington Plateau	19.iii.74	M	25	7.0	6.8	1.03		.15
..	15.vi.37	M	24	10.1	R	—		.41
..	..ii.73	M	24	13.7	16.9	0.81		.68
..	23.i.74	M	25	17.0	24.6	0.69		1.36
Cooloola Blackcall Range	28.i.73	M	26	23.1	R	—		damaged
?	4.v.74	F	26	13.0	14.2	0.91	oviduct not distended	
?	?	F	24	13.5	R	—	*	
?	?	F	25	14.5	14.5	.96	*	
Lamington Plateau	..xii.67	F	26	14.6	R	—	3	
Tweed R.	?	F	25	15.6	R	—	Nil	
Clarence R.	?	F	26	16.4	20.5	0.80	*	
Lamington Plateau	?	F	25	16.5	R	—	Nil	
Tamborine Mountain	20.x.25	F	24	16.7	R	—	6	
Richmond Range	?	F	28	17.7	R	—	Nil	
Lamington Plateau	31.xii.74	F	25	18.0	21.0	0.85	Nil	
Lamington Plateau	12.xii.67	F	24	19.2	R	—	6	
Lamington Plateau	6.xi.74	F	27	10.0	R	—	4	
Clarence R.	?	indet.	24	6.8	—	—	—	
Cunningham's Gap	22.xii.71	indet.	26	11.5	14.4	0.77	—	
Lamington Plateau	?	indet.	26	15.1	19.8	0.77	—	
Lamington Plateau	..xii.72	indet.	26	18.5	R	—	—	

(rain) forest (Czechura 1974).

Richmond Range (one specimen): No habitat information.

Clarence and Tweed Rivers (three specimens): No habitat information.

A specimen has recently been collected by Dr. A. E. Greer, c/- Australian Museum in Wiangarie State Forest, N.S.W., other records are from Palmer's Island, N.S.W. (Loveridge 1934) and Clarence River (Boulenger 1887).

Clearly, the species is distributed throughout north-eastern New South Wales and south-eastern Queensland (Figure 1). The species has been recorded in all instances in moist vegetation types, elevated except in the dense vegetation of the Cooloola sand dunes. The limited range and habitat types as well as a vermiform appear-

ance suggesting burrowing habits may cause individuals to be overlooked.

The bluish-grey coloration of the Cooloola specimen may represent a cryptic adaption for living in the pale-colored silica sands of the area where the density of leaf litter on the forest floor is low. The colour of the other sub-adult and adult specimens ranged from pale brown to dark brown with the presence or absence of bands. This also may represent cryptic coloration in closed forests where the soil is darker.

Breeding

Females were sexually mature when snout vent length was at least 14.6 cm (Table 1). Clutch size varied from 3-6 eggs. A male, 7.0 cm in SVL, had a 1.5 mm remnant yolk sack attached to the intestine. Juveniles were present in March whilst

females had oviducal eggs present from October to December.

Diet

Stomach contents were found in only four of the 18 specimens examined. These comprised (a) one earthworm *Digaster gwongerellae* (Jamieson); (b) two earthworms *Oligochaeta* plus mud; (c) one coleoptera larva plus mud; (d) one insect (indeterminable) plus mud. Three additional specimens had rectal contents of mud. Animal remains were not found in the mud when this was removed for microscopic examination.

A. reticulatus would encounter earthworms on the forest floor at night and in the loose upper soil horizon through which it could burrow.

Acknowledgements

Mr. C. J. Limpus, National Parks and Wildlife Service of Queensland, supervised this study.

The Directors of the Australian Museum and Queensland Museum loaned specimens and Dr. B. Jamieson, University of Queensland identified the earthworm. Drs. H. G. Cogger and A. E. Greer, Australian

Museum, and Ms. J. Covacevich, Queensland Museum, provided most helpful encouragement. Specimens were collected by staff of the National Parks and Wildlife Service of Queensland.

This assistance is gratefully acknowledged.

REFERENCES

- Boulenger, G. A. (1887). Catalogue of the lizards in the British Museum (Natural History). Vol. 3. (Taylor and Francis: London.)
- Coaldrake, J. E. (1961). Survey of the coastal lowlands (wallum) south-east Queensland. C.S.I.R.O. Bull. 283: 1-138.
- Cogger, H. G. (1973). Classification of Australian skinks. Herpetofauna 6: 7-10.
- Cogger, H. G. (1975). Reptiles and Amphibians of Australia. (Reed: Sydney).
- Czechura, G. (1974). A New South East locality for the skink *Anomalopus reticulatus*. Herpetofauna 7: 24.
- Gunther, A. (1873). Notes on, and descriptions of, some lizards with rudimentary limbs in the British Museum. Ann. Mag. Nat. Hist. 12: 145-8.
- Loveridge, A. (1934). Australian reptiles in the Museum of Comparative Zoology. Bull. Mus. Comp. Zool. 77: 243-383.
- Mittleman, M. B. (1952). A generic synopsis of the lizards of the subfamily Lygosominae. Smithson. Mis. Coll. 117: 1-35.
- Walker, J. (1972). In "Shoalwater Bay Area Queensland". C.S.I.R.O. Div. of Land Res. Tech. Mem. 72: 10.
- Worrell, E. (1970). Reptiles of Australia. Second Edition. (Angus & Robertson: Sydney).

Nursery for Wasps? Yes!

On page 61 of the April 'Naturalist' there was a report of what appeared to be white eggs on the body of a caterpillar kept by Mr. Fred Morley. Mr. Ken Strong surmised they were not eggs but cocoons of a wasp, probably a species of *Apanteles*, and that the larvae had been feeding inside

the caterpillar and had emerged to pupate.

Mr. Morley reported that after 16 days the box of cocoons was alive with tiny wasps. The wasps were dark reddish brown, 2.5-3 mm long, each having emerged from a 3 mm cocoon. There were 200-300 of them.

M.J.L.

Errata

In the article "Paddling for Water Plants", by Elizabeth K. Turner (Vict. Nat. Vol. 94:2 Apl. 1977):

Page 77, par. 3, line 6 — for *Marsilea drummondii* read *M. mutica*.

Page 77, par. 2, line 2, for *Typha angustifolia* read *Typha* sp.

Page 77, par. 3, line 6 — for *Marsilea drummondii* read *M. mutica*.

Page 77, par. 4, line 6 — for *Alisma plantago* read *Alisma plantago-aquatica*.